

REMARKS

Claims 41-57 are pending. Claims 41 and 54-57 are amended, as discussed below.

It is respectfully submitted that the present amendment presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the above amendments and the following remarks is requested.

I. The Rejection of Claims 56 and 57 under 35 U.S.C. 112, Enablement

Claims 56 and 57 are rejected under 35 U.S.C. 112, as allegedly lacking enablement. The Office states that although the specification is enabled for constructing a variant that has maltogenic alpha-amylase activity, the specification does not reasonably provide enablement for the construction of a variant void of maltogenic alpha-amylase activity.

As amended, claims 56 and 57 now clarify that the variant has maltogenic alpha-amylase activity. Support for this amendment is clearly found throughout the entire specification, including at page 3, line 31 to page 2, line 6.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

II. Comments in the Advisory Action as to Possible New Matter and Indefiniteness Rejections

The Examiner contends in the Advisory Action that there is apparently some confusion based on the definition of "maltogenic alpha-amylase" provided in the specification in that it recites that the primary enzymatic activity results in the degradation of amylopectin and amylopectin to maltose and longer maltodextrins. The Examiner states that this definition implies that additional activities can be present.

The Examiner's contentions are plainly improper. As is well known in the art, in addition to the main activity of an enzyme, an enzyme may also have other activity, e.g., a side activity. Applicant's definition accurately describes what maltogenic alpha-amylase activity entails. Moreover, the activity of a maltogenic alpha-amylase is well-known in the art, including, for example, described in EC 3.2.1.133 and in the current specification, beginning at the bottom of page 3. Indeed, Applicants' reference to EC 3.2.1.133 alone suffices to define the activity as any skilled artisan would turn to Enzyme Nomenclature as the ultimate authority on the definition of enzyme activity. Indeed, the description on page 3 of the specification is redundant in view of the reference to the EC number.

Thus, the assertion in the Advisory Action and a skilled artisan would not know what is meant by the phrase "maltogenic alpha-amylase activity" is plainly incorrect.

The Examiner identifies where support for the phrase "maltogenic alpha-amylase activity" is found. However, the Examiner then states that the introduction of the phrase "maltogenic alpha-amylase activity", nevertheless, may introduce new matter as Applicants did not specify in their response where support for the phrase "maltogenic alpha-amylase activity" is found. Because the entire specification is directed to and describes maltogenic alpha-amylases and maltogenic alpha-amylase activity, Applicants believed it was not necessary to recite where support for this term came from. However, Applicants respectfully direct the Examiner to following locations for support for this term: the summary of the invention, beginning at page 2, the detailed description throughout, and including beginning at page 3.

For the foregoing reasons, Applicants submit that the claims would clearly overcome the rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

III. The Rejection of Claims 41-57 under 35 U.S.C. 112, Indefiniteness

Claims 41-57 are rejected under 35 U.S.C. 112, second paragraph, as allegedly indefinite. The Office states that the phrase "which can be accommodated in the structure" is indefinite.

In order to expedite prosecution, the phrase "which can be accommodated in the structure" has been deleted. For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

IV. The Rejection of Claims 54-57 under 35 U.S.C. 112, Indefiniteness

Claims 54-57 are rejected under 35 U.S.C. 112, as allegedly indefinite. The Office states that these claims are unclear because it is not clear how many times the steps are repeated, that is, at what point does one stop repeating. This rejection is respectfully traversed.

Applicants respectfully submit that the term "repeating" is not indefinite. The number of times in which the steps will be repeated is appropriately reserved to the skill and discretion of the artisan carrying out the claimed invention. For example, if an artisan is satisfied with the results after repeating the steps once, the artisan can stop repeating. However, if the artisan wants to further improve the enzyme, the artisan may decide to repeat the steps more than once, until the desired result is obtained. Thus, the term "repeating" is not unclear because, as would be

understood, the number of repetitions is appropriately left to skill and discretion of the artisan practicing the claimed invention.

In the Advisory Action, the Examiner still maintains that the term "repeating" is indefinite. The Examiner states that the Artisan would reproduce "unlimitedly" in the absence of criteria establishing when to stop. The Examiner's reasoning fails to give appropriate deference, if any, to the skill of the artisan. Indeed, an artisan would simply repeat the process steps until the artisan is satisfied with the level of improvement. There is no guidance necessary for this point as it is the **skill and discretion** of the artisan which governs when the artisan should stop repeating.

Moreover, the fact that the recited "repeating" step is clearly not indefinite is also evidenced by the numerous issued patent claims related to very field of the present invention that consistently employ the term repeating in an almost identical context (i.e., where the number of times to repeat is based on the skill and discretion of the skilled artisan practicing the claimed invention) and with similar or even significantly less guidance than Applicant's provided in the present specification. These patents, to name just a few of the many, include:

U.S. Patent No. 6,586,182 (claim 27)

U.S. Patent No. 6,506,603 (claims 1, 5, and 7)

U.S. Patent No. 6,537,746 (claim 20)

U.S. Patent No. 6,566,101 (claims 1, 13, 16, 19, 21 and 24)

U.S. Patent No. 6,689,936 (claim 4); and

U.S. Patent No. 6,720,149 (claim 25).

The term "repeating" is also commonly employed in issued patents outside the field also in the context of a desired level (i.e., the number of times to repeat is based on the skill and discretion of the skilled artisan practicing the claimed invention). See, e.g., U.S. Patent No. 6,715,551 (claim 1, 3, 4, 7, 9).

Thus, the term "repeating" is clearly not indefinite and its meaning would be clear to the skilled artisan.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

III. The Rejection of Claims 55 and 56 under 35 U.S.C. 112, Indefiniteness

Claims 55 and 56 are rejected under 35 U.S.C. 112, as allegedly indefinite. The Office states that the phrase "preparing the variant resulting from step a-d" of (claim 55) and the phrase

"preparing the variant resulting from steps a-e)" of claim 56 are vague and indefinite. This rejection is respectfully traversed.

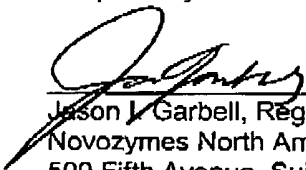
As amended, the claims now recite preparing the variant after step d (claim 55) or after step e (claims 56 and 57). For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

IV. Conclusion

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

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